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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
087770,792	12/19/96	KUYAMA	079777105001

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MM21/0524

EXAMINER  
NGU, H

ART. UNIT: 2871  
PAPER NUMBER

DATE MAILED: 05/24/99

**Please find below and/or attached an Office communication concerning this application or proceeding.**

Commissioner of Patents and Trademarks

# Office Action Summary

Application No.  
**08/770,792**

Applicant(s)  
**Koyama et al**

Examiner  
**Julie-Huyen Ngo**

Group Art Unit  
**2871**



☒ Responsive to communication(s) filed on Apr 29, 1999

☐ This action is **FINAL**.

☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

A shortened statutory period for response to this action is set to expire 3 month(s), or thirty days, whichever is longer, from the mailing date of this communication. Failure to respond within the period for response will cause the application to become abandoned. (35 U.S.C. § 133). Extensions of time may be obtained under the provisions of 37 CFR 1.136(a).

## Disposition of Claims

☒ Claim(s) 1-20 is/are pending in the application.

Of the above, claim(s) \_\_\_\_\_ is/are withdrawn from consideration.

☐ Claim(s) \_\_\_\_\_ is/are allowed.

☒ Claim(s) 1-20 is/are rejected.

☐ Claim(s) \_\_\_\_\_ is/are objected to.

☐ Claims \_\_\_\_\_ are subject to restriction or election requirement.

## Application Papers

☐ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.

☐ The drawing(s) filed on \_\_\_\_\_ is/are objected to by the Examiner.

☐ The proposed drawing correction, filed on \_\_\_\_\_ is ☐ approved ☐ disapproved.

☐ The specification is objected to by the Examiner.

☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. § 119

☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

☐ All ☐ Some\* ☐ None of the CERTIFIED copies of the priority documents have been

☐ received.

☐ received in Application No. (Series Code/Serial Number) \_\_\_\_\_.

☐ received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\*Certified copies not received: \_\_\_\_\_

☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

## Attachment(s)

☐ Notice of References Cited, PTO-892

☐ Information Disclosure Statement(s), PTO-1449, Paper No(s). \_\_\_\_\_

☐ Interview Summary, PTO-413

☐ Notice of Draftsperson's Patent Drawing Review, PTO-948

☐ Notice of Informal Patent Application, PTO-152

--- SEE OFFICE ACTION ON THE FOLLOWING PAGES ---

## **DETAILED ACTION**

### ***Continued Prosecution Application***

The request filed on April 29, 1999 for a Continued Prosecution Application (CPA) under 37 CFR 1.53(d) based on parent Application No.08/770792 is acceptable and a CPA has been established. An action on the CPA follows.

### ***Claim Rejections - 35 USC § 103***

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims 1, 2, 9, and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Applicant's admitted prior art (figure 4 and page 2, lines 14-23 of the specification) in view of Hinata et al (5,610,742).

Applicant admits on page 2, lines 14-23, and shows in Figures 2-6, a conventional active matrix liquid crystal display comprising:

a plurality of pixel TFTs arranged in row and columns on a TFT substrate and arrayed in a matrix; a bus line provided on the TFT substrate and connected with the corresponding pixel TFTs; signal and scanning driving circuits, both formed of TFTs on one substrate all surrounded by a sealant material, a counter substrate, and a liquid crystal in between, covering the pixel TFTs and the drive circuit TFTS. Three edges of the substrates are cut together such that the cut edges are parallel and perpendicular to the rows or columns of the TFT array; a cut side edge of the TFT substrate, a cut side edge of the counter substrate and a cut side edge of said bus line being in alignment with each other.

The only difference between claims 1, 2, 9, 10 and 17-20 and the admitted prior art is that the claims include a non-conductive material applied to the cut side

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See Fig 1  
edge of the TFT substrate, the cut side edge of the counter substrate and the cut side edge of the bus line.

Hinata et al teach, in the abstract and figures 1-5, sealing the edges of the substrates forming the liquid crystal display elements with epoxy adhesive or flexible gas barrier films 13 to decrease poor display performance caused by bubble formation. Since the side edge of the bus line is aligned and inside the TFT substrate, it would have been obvious to apply flexible gas barrier films or a nonconductive film 13 to the side edge of the substrates and the side edge of the bus line of the admitted prior art to decrease poor display performance.

Accordingly, claims 1, 2, 9, 10 and 17- 20 would have been obvious over the admitted prior art in view of Hinata et al.

Claims 3 -8 and 11- 16 are rejected under 3 5 U. S. C. 103 (a) as being unpatentable over Applicant's admitted prior art, in view of Hinata et al, as applied to claims 1, 2, 9, 10 and 17-20 above, and further in view of Spruijt et al (4,394,067).

Spruijt et al teach in column 1, lines 16-64, that by providing the control circuit as an integrated circuit on the electrode substrate, the number of electrical connections to the exterior is reduced. Further, placing the circuit in the rim of the sealing material between the two substrates provides a good mechanical and impervious protection to the circuit. However, since the size of the chip is larger than the thickness of the liquid crystal layer, to accommodate the circuit in the rim of the seal, one must recess a cavity in the supporting plates. Therefore, it would have been obvious to thin the substrates to accommodate a control circuit and to

include the control circuit on the TFT substrate in the sealing material at the accommodation portion to reduce the number of electrical connections to the exterior, provide a good mechanical and impervious protection of the circuit, and provide sufficient space for the circuit. Therefore, claims 3-8 and 11-16 would have been obvious over the admitted prior art in view of Hinata et al and Spruijt et al.

### ***Response to Arguments***

Applicant's arguments filed March 8, 1999 have been fully considered but they are not persuasive.

In response to applicant's argument that Hinata does not disclose or suggest applying the non-conductive material to the side edge of the bus line. Since the side edge of the bus line is aligned and inside the TFT substrate, it would have been obvious to apply flexible gas barrier films or a nonconductive film 13 to the side edge of the substrates and also to the side edge of the bus line of applicant's admitted prior art to decrease poor display performance.

In response to applicant's argument that Sprujit does not disclose the limitation of claim 1 including the bus line and the filling material. Applicant's admitted prior art comprises all the limitation recited in claims 1-20 excluding the filling material and the thin substrates. The Examiner is relying on Hinata solely for its teaching of applying the filling material to the side edges of the substrates and the side edges of the bus line. On the other hand, The Examiner relied on Sprujit's teaching to form the thin film substrate to accommodate a control circuit and to include the control circuit on the TFT substrate in the sealing material at the accommodation portion to reduce the number of electrical connections to the

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exterior, provide a good mechanical and impervious protection of the circuit, and provide sufficient space for the circuit. Therefore, Sprujit is not required to disclose the bus line nor filling material.


***Contact Information***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Julie Ngo whose telephone number is (703) 305-3508.

Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (703) 308-0956.

Papers related to this application may be submitted to Art Unit 2871 by facsimile transmission. The faxing of such papers must conform with the notice published in the Official Gazette, 1096 OG 30 (November 15, 1989). The Art Unit 2871 fax number are (703) 308-7722/7724.

JHLN  
May 18, 1999

  
**William L. Sikes**  
**Supervisory Patent Examiner**  
**Group 2871**